



GENETIC ENGINEERING

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WHAT IS GENETIC ENGINEERING?

- Genetic Engineering is the process of using technology to change the genetic make-up of an organism whether it be in plants or animals. The changes in genetics might be aimed at curing disease, preventing disease, improving outputs as in crops, or general improvement of an organism or its functions.
- Genetic engineering manually moves certain genes whereas in the traditional way genes are moved through natural processes or reproduction.
- With genetic engineering there can be specific genes that are passed from one organism to another in order to get a desired output.



COMPUTERS AND GENETIC ENGINEERING

- Through computer languages scientists have the ability to simulate changes in DNA to bring about changes in genetic coding.
- Advancements in programming languages now allow for simulation and modeling that are more complex than they have been before.
- This gives the scientists the opportunity to make scenarios in which they can test different variations in DNA before application to a plant or animal.



GENETIC ENGINEERING OF PLANTS

- One of the most advanced forms of genetic engineering.
- Has the ability to eliminate the issue of food shortages, but some bring up the problem of altering natures.
- Genetic engineering has been widely used in crops without much controversy and with great improvements overall.
- At this point it has been a positive change. There has not been any negative side effects of genetically changed crops.



DISCUSSION (OPEN TO THE CLASS)

- Although there have not been any negative outcomes to genetically modified crops, do you think that there will be long term effects on the ecosystem?
 - Do you think there may be an effect on people (us) who ingest these modified crops?



GENETIC ENGINEERING OF ANIMALS

- The genetic engineering of animals is not as advanced as it is for plants.
- Genetic modification of animals could be beneficial for reasons from consumable products from animals to the use of parts of an animal for transplantable purposes.
- The use of genetic modifications among animals is not used on a commercial scale.
- The ultimate goal is to make an animal with similar enough genetic make-up which would allow for testing of drugs, use of organs, and other scientific advancements.



DISCUSSION

- Do you think that the genetic modification of animals for the use of their organs and/or output of consumable items is going to be something we see on a large scale in years to come? Decades? Our lifetime?



PAUL ROOT WOLPE: IT'S TIME TO QUESTION BIO-ENGINEERING

- http://www.ted.com/talks/paul_root_wolpe_it_s_time_to_question_bio_engineering.html



GENETIC ENGINEERING: FUTURE AND ETHICS

- Thoughts in regards to Paul Root Wolpe's presentation?
- Do you think that the ethical issues of genetic modifications will become more important issues when genetic modification possibilities increase and are directed more extensively to animals?
 - Why do you think the genetic modification of crops has not been a largely controversial issue?
- What do you think the future holds in regards to genetic engineering.
 - What do you think will help it grow?
 - What do you think will prevent its growth?



WORK CITED

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